



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/583,156

06/16/2006

Hideki Takamatsu

128387

8989

25944 7590 07/20/2009

OLIFF & BERRIDGE, PLC

P.O. BOX 320850

ALEXANDRIA, VA 22320-4850

EXAMINER

DAGER, JONATHAN M

ART UNIT

PAPER NUMBER

3663

MAIL DATE

DELIVERY MODE

07/20/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,156	Applicant(s) TAKAMATSU ET AL.	
	Examiner JONATHAN M. DAGER	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 2-6, 15, 19-23 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 7-14, 16-18, 24-31, 33 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20 May 2008, 24 April 2008, 16 June 2006</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3663

DETAILED ACTION

Response to Arguments

1. Applicant's election with traverse of groups I and II in the reply filed on 25 March 2009 is acknowledged. The traversal is on the ground(s) that lack of unity has not been established because there is subject matter common to all the claims. This is not found persuasive because:

MPEP 1850(II) states that:

“Whether or not any particular technical feature makes a “contribution” over the prior art, and therefore constitutes a “special technical feature,” should be considered with respect to novelty and inventive step. For example, a document discovered in the international search shows that there is a presumption of lack of novelty or inventive step in a main claim, so that there may be no technical relationship left over the prior art among the claimed inventions involving one or more of the same or corresponding special technical features, leaving two or more dependent claims without a single general inventive concept.

Lack of unity of invention may be directly evident “a priori,” that is, before considering the claims in relation to any prior art, or may only become apparent “a posteriori,” that is, after taking the prior art into consideration. For example, independent claims to A + X, A + Y, X + Y can be said to lack unity a priori as there is no subject matter common to all claims. In the case of independent claims to A + X and A + Y, unity of invention is present a priori as A is common to both claims. However, if it can be established that A is known, there is lack of unity a posteriori, since A (be it a single feature or a group of features) is not a technical feature that defines a contribution over the prior art.”

In the instant case, the ISR filed 16 June 2006 makes it clear in the cited art that the single feature relied upon by the applicant, i.e. the sensing unit/means for sensing an operation request with respect to at least one control unit, is not a technical feature that defines a contribution over the prior art. Further, it has been established in the ISR that all elements of the independent claims are known.

Therefore, restriction between the groupings is warranted, and the requirement is still deemed proper and is therefore made FINAL.

2. Claims 2-6, 15, 19-23, and 32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 25 March 2009.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Starting on page 22 of the specification, none of the items detailed as appearing in Fig. 2 share corresponding item numbers. Figs. 7-10 share the same condition.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Art Unit: 3663

It is further noted that the specification uses duplicate reference numbers for differing objects. For example: the index number (2), referred to on page 22 refers to a “main control system”. However, the same index number (2) is used to describe a “correction function unit”.

If these matters are not corrected, the drawings will be objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters, e.g. "(2)", have been used to designate multiple objects. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18, 24-31, 33, and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18, and claims dependent therefrom contain the phrase “means for” in the claim language. This embodiment is supported throughout the specification, and the claim language is

Art Unit: 3663

subsequently treated under 35 USC 112, sixth paragraph. However, the specification fails to set forth the exact structure, or equivalent thereof, that corresponds to the claimed function.

For example:

Claim 18 details “means for sensing an operation request”. However, the specification defines the "means for sensing" as a “sensing unit”. This indefinite unit does not provide adequate structure for coverage under 35 U.S.C. 112, sixth paragraph.

"If the specification is not clear as to the structure that the patentee intends to correspond to the claimed function, then the patentee has not paid the price for use of the convenience of broad claiming afforded by 112, sixth paragraph but is rather attempting to claim in functional terms unbounded by any reference to structure in the specification. If one employs means-plus-function language in a claim, one must set forth in the specification an adequate disclosure showing what is meant by that language. If an applicant fails to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112." See *Biomedino, LLC v Waters Technologies Corporation* (Fed Cir, 2006-1350, 6/18/2007).

Subsequently, all claims dependent from claim 18 are rejected under identical grounds for similar embodiments and/or dependency.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 3663

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 7, 8, 11-14, 16-18, 24, 25, 28-31, 33, and 34 are rejected under 35

U.S.C. 102(b) as being anticipated by Dominke (US 6,154,688).

Regarding claims 1, 8, 11, 13, 14, 18, and 30, as best understood, Dominke has disclosed a control system for a vehicle is shown in the context of a block circuit diagram. Here, reference numeral 100 identifies a so-called master controller which includes, inter alia, an interface 102 (gateway) to which various bus systems are connected. The allocation of these bus systems is exemplary.

The first bus system 104 defines the communication between the master controller 100 and the elements controlling the drive torque. The bus 104 connects the master controller 100 to a control apparatus 106 for engine control and a control apparatus 108 for transmission control. (column 4 lines 36-46).

Thus, Dominke has disclosed a vehicle integrated system comprising a plurality of control units for controlling the running state of the vehicle. further, the above provides for a drive control system.

Dominke discloses that the bus 104 is connected via corresponding lines 114 to 116 to respective measuring devices 110 to 112. These measuring devices detect the operating variables of the engine and/or of the vehicle such as: road speed, engine rpm, supplied air quantity or air mass, load, exhaust-gas composition, engine temperature, transmission ratio, shift state of a converter, knocking tendency, et cetera. These operating variables are to be evaluated for the control of the drive torque (column 4 lines 47-55).

Art Unit: 3663

Thus, the environment and operating parameters of the vehicle are provided over the bus line to the associated controller(s).

Dominke discloses that a second bus 118 connects the master controller 100 (that is, its interface 102) to elements for brake control 120, steering 122 and/or for vehicle control 124

Dominke discloses that operating variables are transmitted from measuring devices 126 to 128 via respective connecting lines 130 to 132 to bus 118. These operating variables are those of the engine and/or of the vehicle such as wheel rpms, spring/shock absorber displacements, braking forces, et cetera. Furthermore, additional bus systems 134 and 136 are provided which preferably operate at different transmitting rates than the systems 104 and 118. These bus systems connect the master controller to apparatus 138 of the chassis electronics (generator, light, seat position, window lifters, sun-roof drive, et cetera) on bus 134 and, if required, to apparatus 140 for telecommunications on bus 136. The actuating elements and actuators, which are necessary to influence the engine, brake system, et cetera, are either connected to the particular control unit or to the particular bus (column 4 lines 56-67, column 5 lines 1-7).

Thus, other controllers, including a braking and steering control unit, are connected in parallel to the main controller/processing unit. Further, all individual autonomous controllers are configured for manipulating an actuator.

Dominke discloses that each component receives at least one command either by another component or by the component itself (inherent command). Components, which do not receive commands from another component (to which, however, information requests are made for the preparation of information such as measured values), require a so-called inherent command for making the information available. In this case, the component is virtually its own command

Art Unit: 3663

generator. This structuring ensures that no component in the hierarchical command flow remains unconsidered as a command receiver but is bound to this command receiver. Likewise, a component can only be a command generator when it has previously received a command from another component. Each component has a task, otherwise, the component is superfluous. The components take care of the requested tasks substantially autarch(sic) under the defined peripheral conditions. The commands (tasks) are specified by target information and peripheral conditions. For the peripheral conditions, one can differentiate between general peripheral conditions and command-related peripheral conditions. The command-related peripheral conditions give, for example, with the transfer of values, the quantization thereof as well as the needed time request (timing) (column 5 lines 25-47).

Thus, each controller is configured to generate a target, and generate information such that the sensed request is shared among each control unit.

Dominke discloses that the operation of the control system illustrated in FIG. 7 is shown with respect to an example of an acceleration operation wherein at least one drive wheel tends to spin. First, the driver actuates the accelerator pedal and advises the coordinator "drive train" of the desired acceleration. The total vehicle coordinator in the first hierarchical level inquires at the coordinator "source" as to the mechanical energy to be made available by the source "mechanical energy" (for example, torque). Correspondingly, the coordinator "total vehicle" interrogates coordinator "vehicle movement" a variable which the coordinator "vehicle movement" makes available from its subsystem "drive train and brake". There, the torque distributor determines, for impermissible drive slip, a corresponding reduction of the mechanical energy, which is desired by the driver, for the propulsion. The actual drive slip control therefore lies in the vehicle

Art Unit: 3663

movement. Here, the monitoring of the performance of the wheels takes place. This means that neither the coordinator "total vehicle" nor the source "mechanical energy", and therefore the engine, know the basis for a reduced output torque request. This knowledge is not necessary for the above-mentioned components for taking care of their commands. The coordinator "total vehicle" forms (from the supplied information in accordance with a known strategy) commands to the source "mechanical energy" with which the source makes available the necessary engine energy which is maximum for a stable propulsion. In the special case, the coordinator "total vehicle" gives the coordinator "source" a command that adjusts an output torque value determined by the system vehicle movement. The source coordinator defines corresponding commands for adjusting this input value for the components "clutch", "engine" and "transmission" which the coordinator "engine" converts into actuator commands for the air supply, injection and ignition. The brake intervention during the drive slip control is effected exclusively in the component "drive train and brake" by the coordinator of the torque distribution (column 10 lines 23-59).

Thus, Dominke anticipates a sensing unit for sensing an operation request with respect to at least one control unit, the respective controller establishing a control target, the coordinator (processor) adjusting the operation request as necessary with respect to a control hierarchy, and the controller manipulating the corresponding actuator.

Regarding claims 7, 12, 16, 17, 24, 33, and 34, as best understood, in addition to that which is cited above, Dominke discloses the accelerator pedal with which the driver formulates the propulsion command is preferably arranged in the component drive train. A brake pedal is

Art Unit: 3663

purposefully arranged in the system "vehicle movement" and there in the second hierarchical level of the component "drive train and brake" for the component "brake". Operator-controlled elements, which are arranged in a higher hierarchical level, are operator-controlled elements which operate on several systems (for example, the ignition lock). This is to be assigned, for example to the coordinator "total vehicle", in the first hierarchical level of the total structure (column 10 lines 2-12).

Thus, the system of Dominke is configured to sense information relating to the driver of the vehicle (e.g. acceleration request), and provide an arbitration with respect to control target at each control unit. Further, the above provides for the execution of an operation is controlled with respect to a hierarchy corresponding to a request of the driver towards a lower control hierarchy corresponding to each actuator.

Regarding claims 8, 25, 28, and 29, as best understood, Dominke discloses that the operation of the control system illustrated in FIG. 7 is shown with respect to an example of an acceleration operation wherein at least one drive wheel tends to spin. First, the driver actuates the accelerator pedal and advises the coordinator "drive train" of the desired acceleration. The total vehicle coordinator in the first hierarchical level inquires at the coordinator "source" as to the mechanical energy to be made available by the source "mechanical energy" (for example, torque). Correspondingly, the coordinator "total vehicle" interrogates coordinator "vehicle movement" a variable which the coordinator "vehicle movement" makes available from its subsystem "drive train and brake". There, the torque distributor determines, for impermissible drive slip, a corresponding reduction of the mechanical energy, which is desired by the driver,

Art Unit: 3663

for the propulsion. The actual drive slip control therefore lies in the vehicle movement. Here, the monitoring of the performance of the wheels takes place. This means that neither the coordinator "total vehicle" nor the source "mechanical energy", and therefore the engine, know the basis for a reduced output torque request. This knowledge is not necessary for the above-mentioned components for taking care of their commands. The coordinator "total vehicle" forms (from the supplied information in accordance with a known strategy) commands to the source "mechanical energy" with which the source makes available the necessary engine energy which is maximum for a stable propulsion. In the special case, the coordinator "total vehicle" gives the coordinator "source" a command that adjusts an output torque value determined by the system vehicle movement. The source coordinator defines corresponding commands for adjusting this input value for the components "clutch", "engine" and "transmission" which the coordinator "engine" converts into actuator commands for the air supply, injection and ignition. The brake intervention during the drive slip control is effected exclusively in the component "drive train and brake" by the coordinator of the torque distribution (column 10 lines 23-59).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3663

8. Claims 9, 10, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dominke, as applied to claims 1, 7, and 18 above, and further in view of Obradovich (US 2002/0055811).

Regarding claims 9, 10, 26, and 27, Dominke, as applied to claims 1 and 7 above, does provide for a processing sub-unit providing arbitration between corresponding targets at the respective control units, but does not explicitly detail that the action is accomplished upon implementation of cruise control.

Obradovich, in a similar device, teaches a similar vehicle communication architecture, in which adaptive cruise control functionality is realized. The detection subsystem of Obradovich also helps provide an adaptive cruise control capability. Specifically, subsystem 130 measures the distance to the vehicle just ahead. With electronic transmission/throttle system 325 and brake subsystem 125, processor 103 adjusts the vehicle's speed to keep it moving with the traffic flow. If the vehicle ahead speeds up or slows down, subsystem 130 signals processor 103 to accordingly adjust the throttle or brakes to maintain a safe distance (para 0066).

Thus, Obradovich teaches ACC technology applied over multiple controllers via arbitration by a master processor.

Dominke has disclosed a base invention which is capable of all functions of the claimed embodiments, including a vehicle control architecture wherein a processor parallel to all control units distributes information between said units to influence the vehicle performance. Where Dominke is deficient, with respect to the claims is that Dominke does not explicitly disclose the vehicle performance influenced by cruise control. Obradovich cures the deficiency in a similar invention.

Art Unit: 3663

Thus, since both inventions both disclose/teach similar elements and usage, it would have been obvious to one of ordinary skill in the art at the time of the invention to simply substitute one apparatus into the other, or at least combine their respective elements, to achieve no more than the predictable result of a communication network in a vehicle wherein activation of cruise control affects the final outputs of all other control units involved which influence vehicle movement.

Combining prior art elements according to known methods to yield predictable results is a rationale to support a conclusion of obviousness. See MPEP 2143(A).

Simple substitution of one known element for another to obtain predictable results will support a conclusion of obviousness. See MPEP 2143 (B).

9. It is noted that a number of the claims contain statements of intended use or field of use (e.g. “for sensing”, “for generating”, “for controlling”, etc.). These statements of intended use or field of use and “wherein” clauses are essentially method limitations. Thus, these claims, as well as other statements of intended use, do not serve to patentably distinguish the claimed structure over that of the reference.

See MPEP § 2114 which states:

A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions.

Apparatus claims cover what a device is not what a device does.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Additionally, the terms "configured to" or "arranged to" are considered to be structurally modified statements and are not intended use. Claims amended to include the above listed language may patentably distinguish themselves structurally.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN M. DAGER whose telephone number is (571)270-1332. The examiner can normally be reached on 0830-1800 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/583,156

Page 15

Art Unit: 3663

JD

15 July 2009

/Jack W. Keith/

Supervisory Patent Examiner, Art Unit 3663